

Atty. Dkt. No. 10010469-1
USSN: 10/066,518

AMENDMENTS TO THE CLAIMS

Please incorporate the following amendments to the subject application:

1. **(Currently Amended)** A method of fabricating multiple chemical arrays on a substrate, wherein:
 - each array of the multiple chemical array has multiple rows of features, wherein the features are separated from each other by inter-feature areas;
 - the multiple chemical arrays are separated from each other by inter-array areas, wherein the inter-array areas are of greater width than the inter-feature areas; and
 - the multiple chemical arrays are arranged in sets where the arrays of different sets are arranged in an orthogonal orientation with respect to the rows;
 - the method comprising dispensing drops onto the substrate from a drop dispensing head positioned such that a gap is maintained between the head and the substrate while moving the head and substrate relative to one another along a bi-directional path so as to fabricate the arrays, wherein the bi-directional path for the relative moving comprises:
 - (a) moving the head in a direction along the rows of a first array set;
 - (b) then moving the head in an opposite direction along the rows of a second array set without intervening movement of the head in the opposite direction over all of the first array set; and
 - (c) repeating (b), with the second array set of an earlier cycle being the first array set of a later cycle; **wherein between movements in the opposite directions, the dispensing head is displaced in a sideways orientation between one array set and the next.**
2. **(Original)** A method according to claim 1 wherein the chemical arrays are biopolymer arrays.
3. **(Original)** A method according to claim 1 wherein the first and second array sets are adjacent to one another.

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4. (Previously Presented) A method according to claim 1 wherein the repeating in (c) is with a same two array sets.
5. (Previously Presented) A method according to claim 1 wherein (b) is repeated multiple times each time with a new second array set.
6. (Original) A method according to claim 5 wherein each new second array set is adjacent the first array set of the same cycle.
7. (Original) A method according to claim 5 additionally comprising then repeating the relative moving path of the head and substrate while dispensing drops.
8. (Original) A method according to claim 7 wherein the head is re-loaded with fluid between repetitions of the path.
9. (Previously Presented) A method according to claim 7 wherein different repetitions of movement of the head on the path during drop dispensing are parallel and offset in the sideways orientation from one another.
10. (Original) A method according to claim 1 wherein the rows of features in the arrays are straight lines.
- 11 - 12. (Canceled)
13. (Previously Presented) A method according to claim 1 wherein the arrays have the same array layout.
14. (Currently Amended) ~~A method according to claim 1~~ **A method of fabricating multiple chemical arrays on a substrate, wherein:**
each array of the multiple chemical array has multiple rows of features,
wherein the features are separated from each other by inter-feature areas;
the multiple chemical arrays are separated from each other by inter-array areas, wherein the inter-array areas are of greater width than the inter-

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feature areas; and

the multiple chemical arrays are arranged in sets where the arrays of different sets are arranged in an orthogonal orientation with respect to the rows;

the method comprising dispensing drops onto the substrate from a drop dispensing head positioned such that a gap is maintained between the head and the substrate while moving the head and substrate relative to one another along a bi-directional path so as to fabricate the arrays, wherein the bi-directional path for the relative moving comprises:

(a) moving the head in a direction along the rows of a first array set;

(b) then moving the head in an opposite direction along the rows of a second array set without intervening movement of the head in the opposite direction over all of the first array set; and

(c) repeating (b), with the second array set of an earlier cycle being the first array set of a later cycle; and

wherein the majority of the rows in arrays within a set are dispensed while the head is moving in a same direction along the rows.

15. (Currently Amended) ~~A method according to Claim 4~~ A method of fabricating multiple chemical arrays on a substrate, wherein:

each array of the multiple chemical array has multiple rows of features, wherein the features are separated from each other by inter-feature areas;

the multiple chemical arrays are separated from each other by inter-array areas, wherein the inter-array areas are of greater width than the inter-feature areas; and

the multiple chemical arrays are arranged in sets where the arrays of different sets are arranged in an orthogonal orientation with respect to the rows;

the method comprising dispensing drops onto the substrate from a drop dispensing head positioned such that a gap is maintained between the head and the substrate while moving the head and substrate relative to one another along a bi-directional path so as to fabricate the arrays, wherein the bi-directional path for the relative moving comprises:

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- (a) moving the head in a direction along the rows of a first array set;
(b) then moving the head in an opposite direction along the rows of a second array set without intervening movement of the head in the opposite direction over all of the first array set; and
(c) repeating (b), with the second array set of an earlier cycle being the first array set of a later cycle; and

wherein at least 80% of the rows in arrays within a set are dispensed while the head is moving in a same direction along the rows.

16. (Original) A method according to claim 1 additionally comprising separating the substrate into units each of which carries at least one of the arrays.
17. (Original) A method according to claim 1 additionally comprising adding array identifiers to the substrate each in proximity with a corresponding array.
18. (Original) A method according to claim 1 wherein the head has multiple drop dispensers.
19. (Original) A method according to claim 18 wherein the drop dispensers are pulse jets.
- 20 – 43. (Canceled)
44. (Currently Amended) A method of producing a structure comprising a substrate having multiple chemical arrays present on a surface thereof, wherein (i) each chemical array has multiple features arranged in rows and separated from each other by inter-feature areas; (ii) the multiple chemical arrays are separated from each other by inter-array areas, wherein the inter-array areas are of greater width than the inter-feature areas; and (iii) the multiple chemical arrays are arranged in sets where the arrays of different sets are arranged in an orthogonal orientation with respect to the rows of features;
- the method comprising:
- (a) moving a drop dispensing head relative to the substrate along the rows of a first set of chemical arrays while dispensing drops onto the substrate;

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(b) moving the drop dispensing head relative to the substrate in an opposite direction of step (a) along the rows of a second array set while dispensing drops onto the substrate without an intervening movement of the dispensing head across the substrate; and

(c) repeating (b), with the second array set of an earlier cycle being the first array set of a later cycle;

wherein between movements in the opposite directions, the dispensing head is displaced in a sideways orientation between one array set and the next; and

wherein a structure comprising a substrate having multiple chemical arrays is produced.

45. (Previously Presented) A method according to claim 44 wherein the chemical arrays are biopolymer arrays.

46. (Previously Presented) A method according to claim 44 wherein the head has multiple drop dispensers.